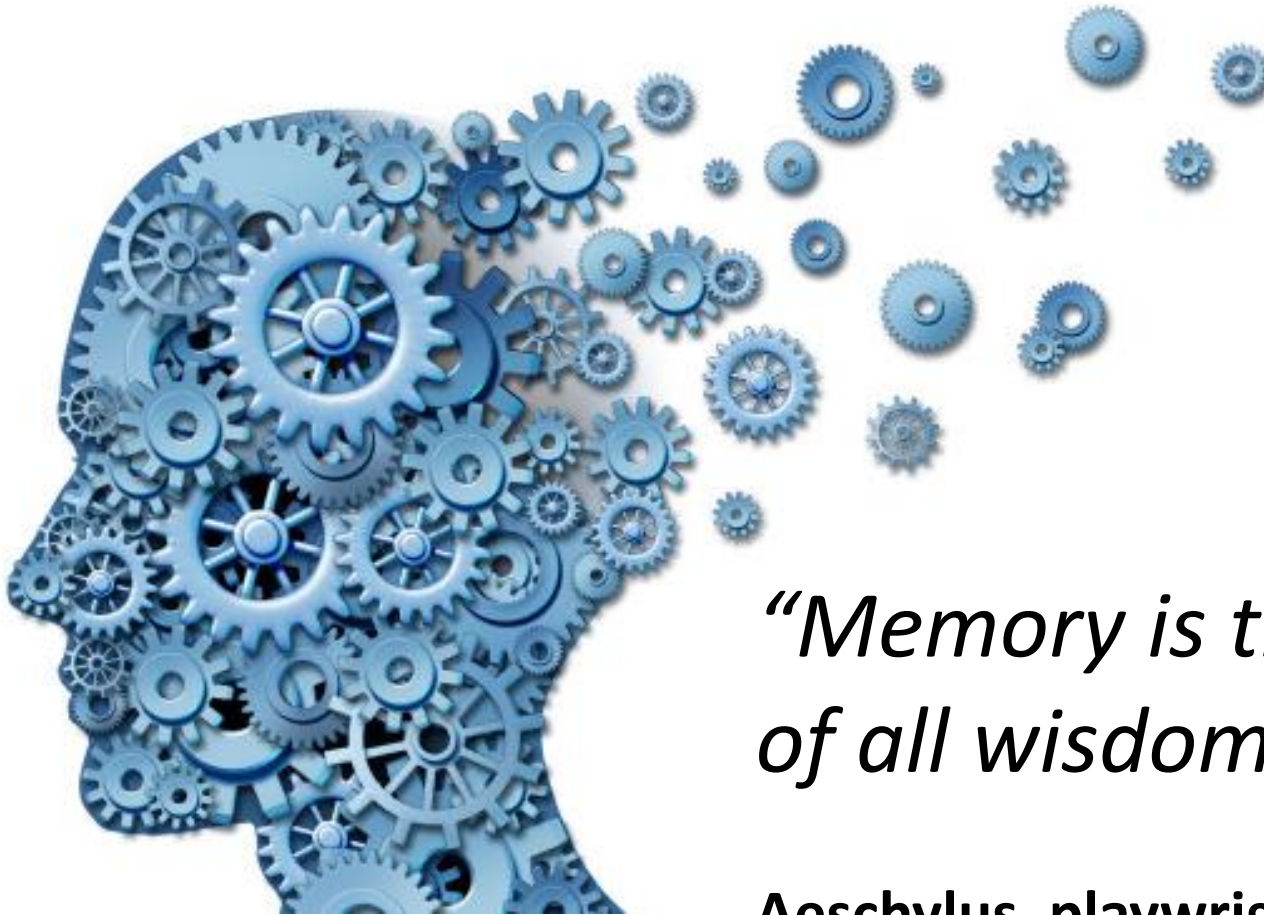


Learning and memory

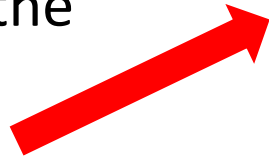


*“Memory is the mother
of all wisdom.”*

Aeschylus, playwright (523 – 456 BC)

Rehearsal and practice

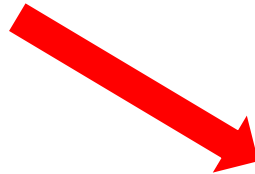
Rehearsal deals with the repetition and reprocessing of information.



Rote rehearsal

- to learn information in a specific form or sequence
- stores information exactly as it enters the working memory

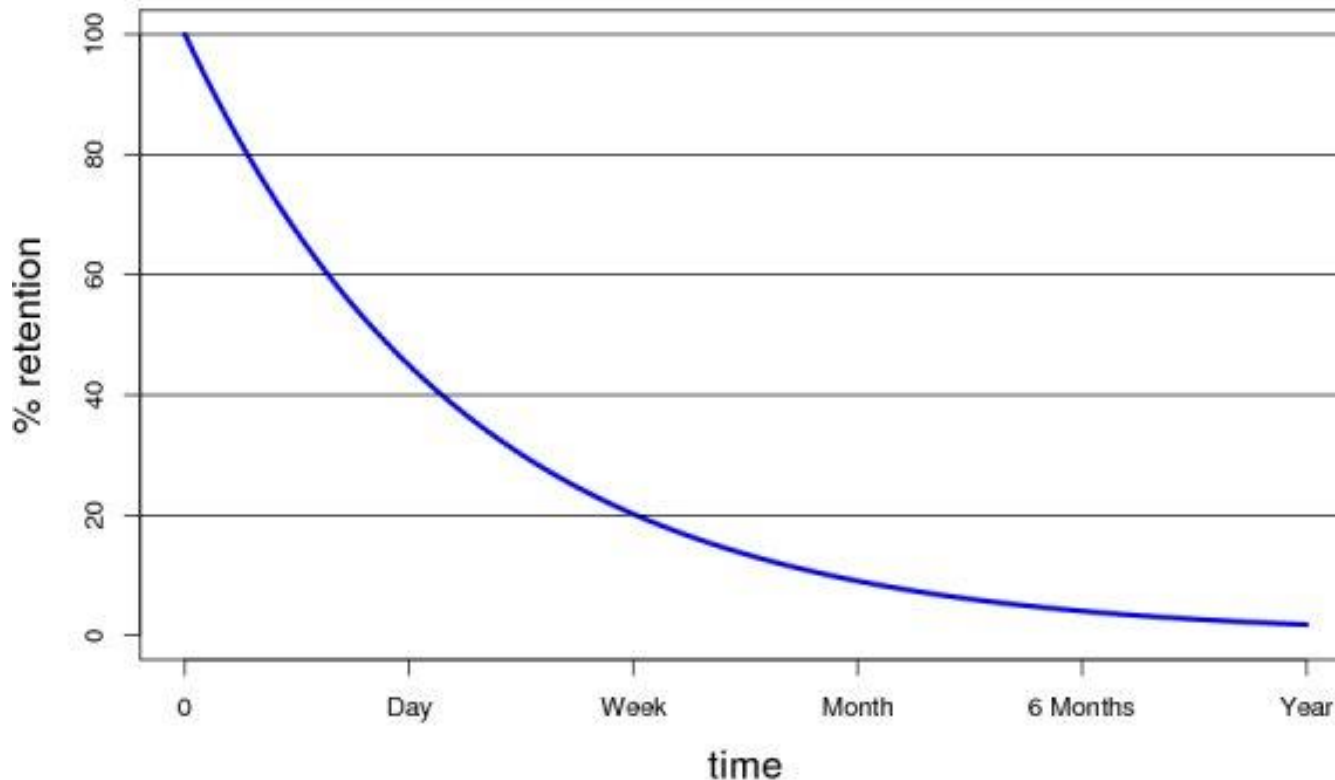
Repetition of motor skills is generally referred to as **practice**.



Elaborative rehearsal

- attach information to prior learning
- more complex
- exploring relationships

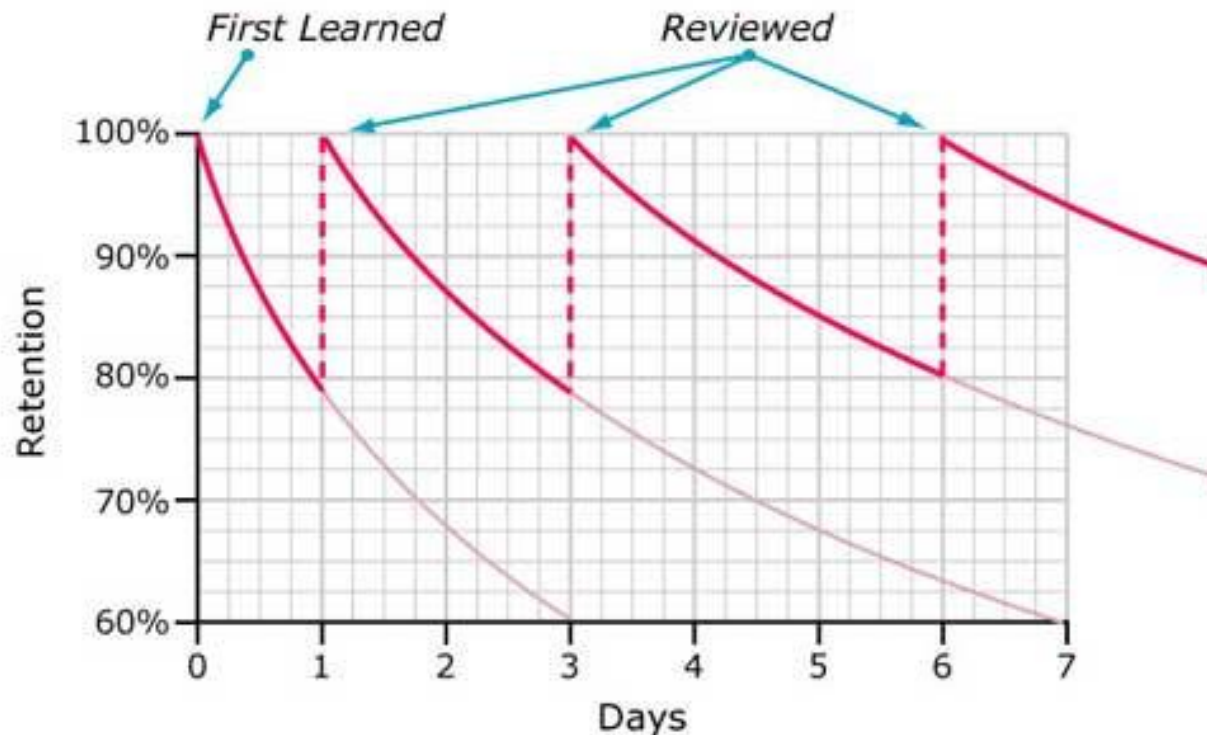
Total recall...



After 1 day students only remember 40% of what was learnt. This falls to 20% after a week. Forgetting is most rapid in the time straight after learning something new.

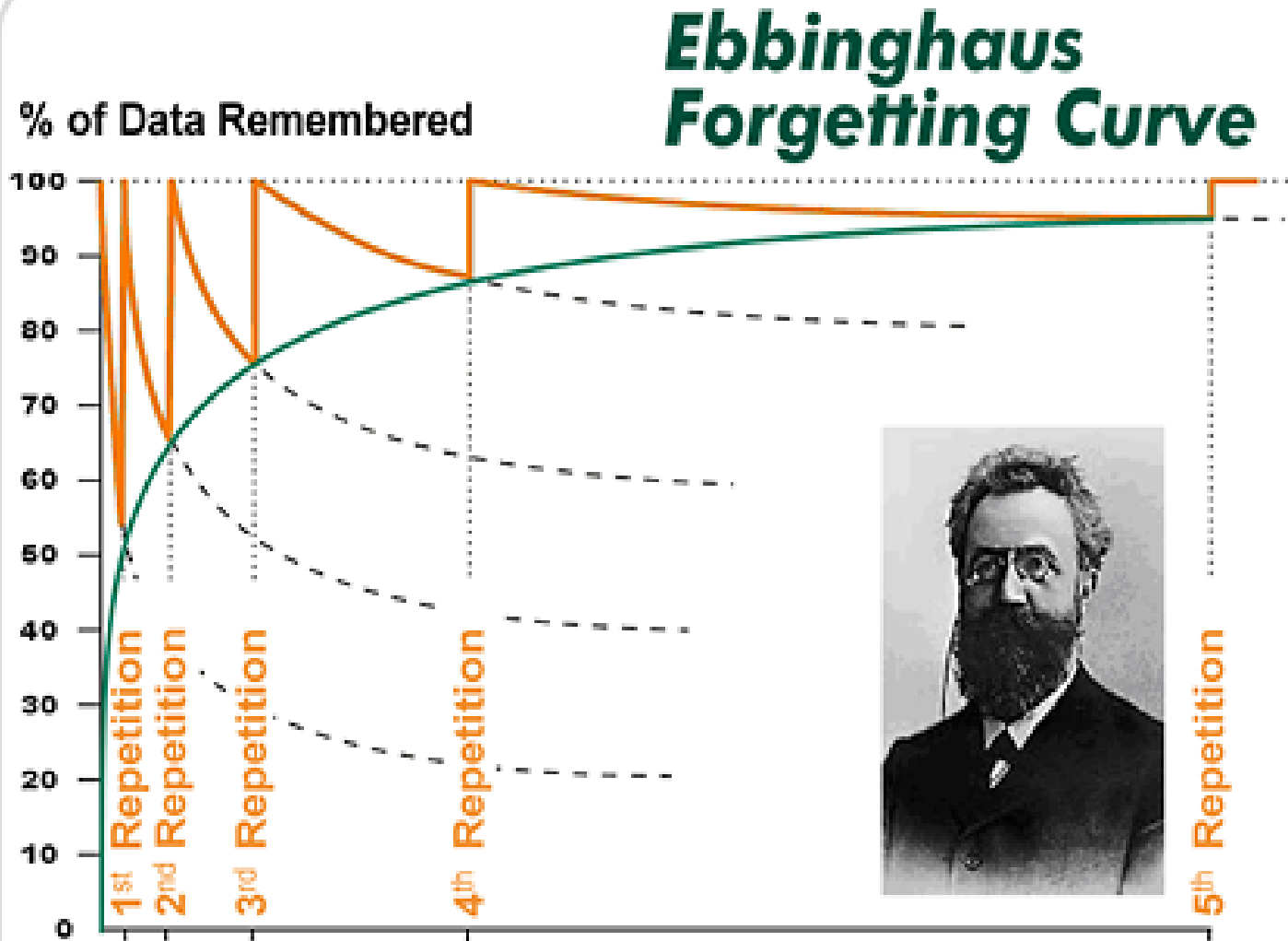
Total recall...

Typical Forgetting Curve for Newly Learned Information



After 1 day students will remember 40% of what was learnt. This falls to 20% after a week. Forgetting is most rapid in the time straight after learning something new.

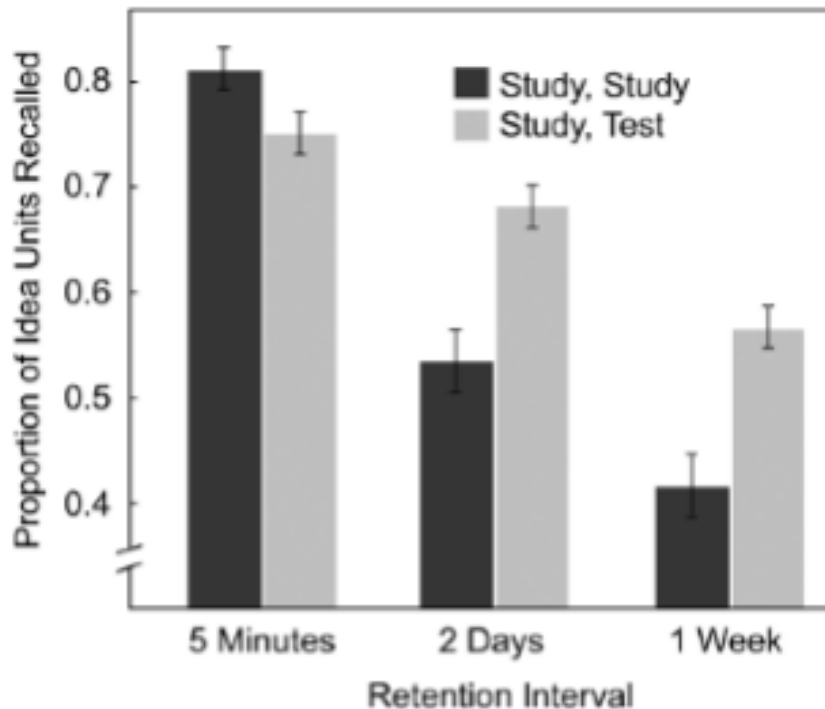
Spacing



The distributed practice technique.

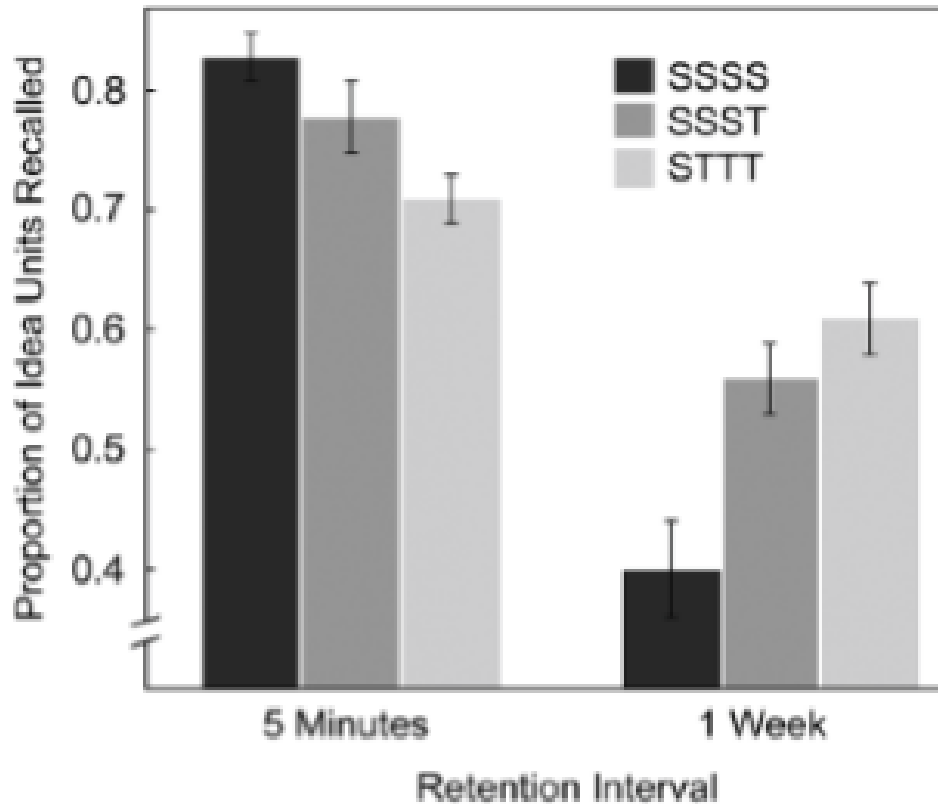
Revise a topic. Revisit it 5 hours later. Then a day later. Then 2 days later. Then a week later. Each time the memories fade more slowly.... Long term memories are developed; meaning is sustained, learning is consolidated and more accurate recall is assured .

The testing effect



- “Cramming” boosts short term recall, **but is not effective for long term accuracy**
- A short test after revising a topic increases long term recall.

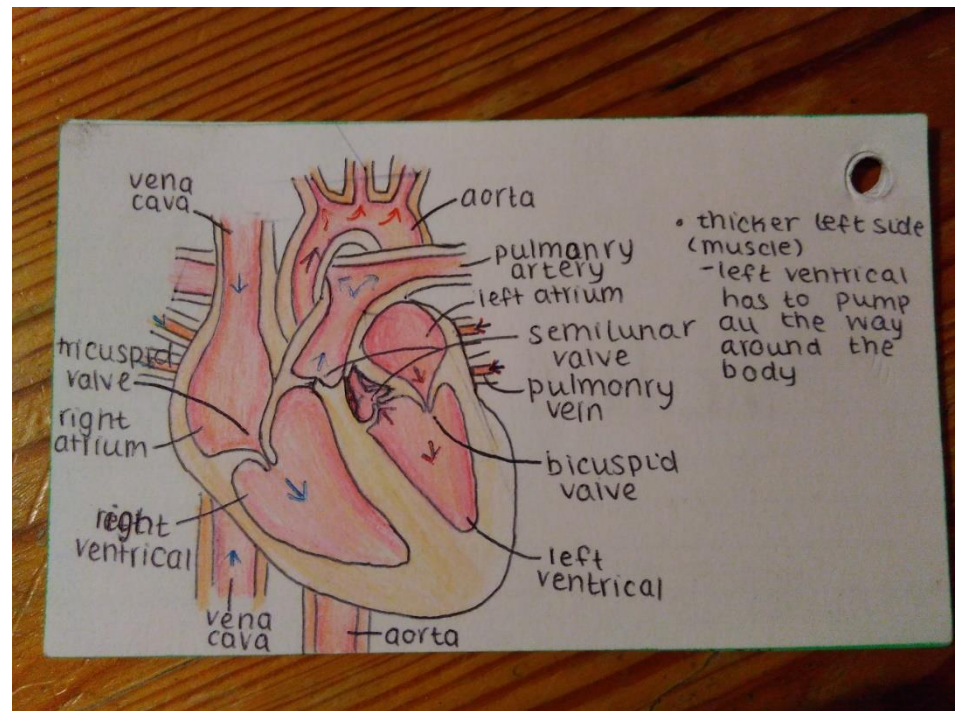
The testing effect



Testing actually creates better memories

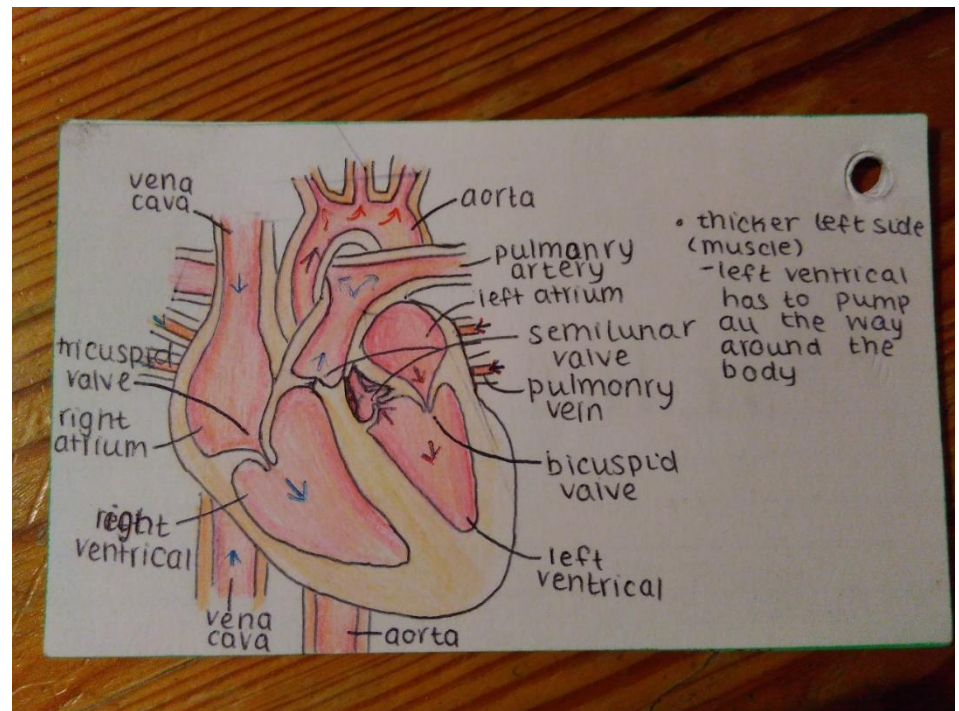
Flash cards

- Revise a topic, transforming the information into a flash card
- Recall test straight away
- Take test again 5 hours later. Correct mistakes and knowledge gaps.
- Take test again the next day, correcting mistakes.
- Take test again a few days later.



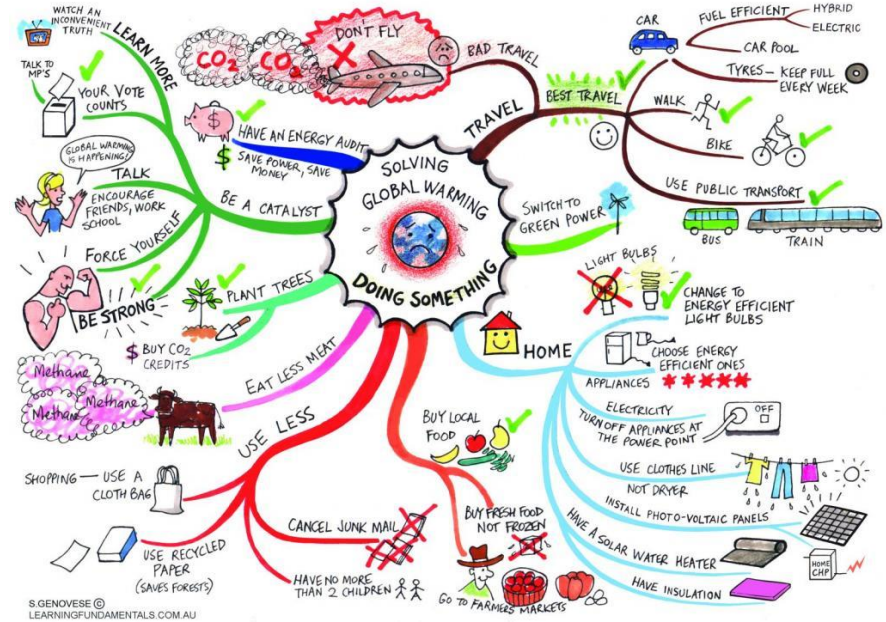
Flash cards

- Retrieval practice is one of the most effective revision strategies
- Flash cards are perfect for this!
- Good notes, diagrams, symbols and pictures
- Use in the car, at home, anywhere!
- [quizlet.com](https://www.quizlet.com)
- www.funnelbrain.com

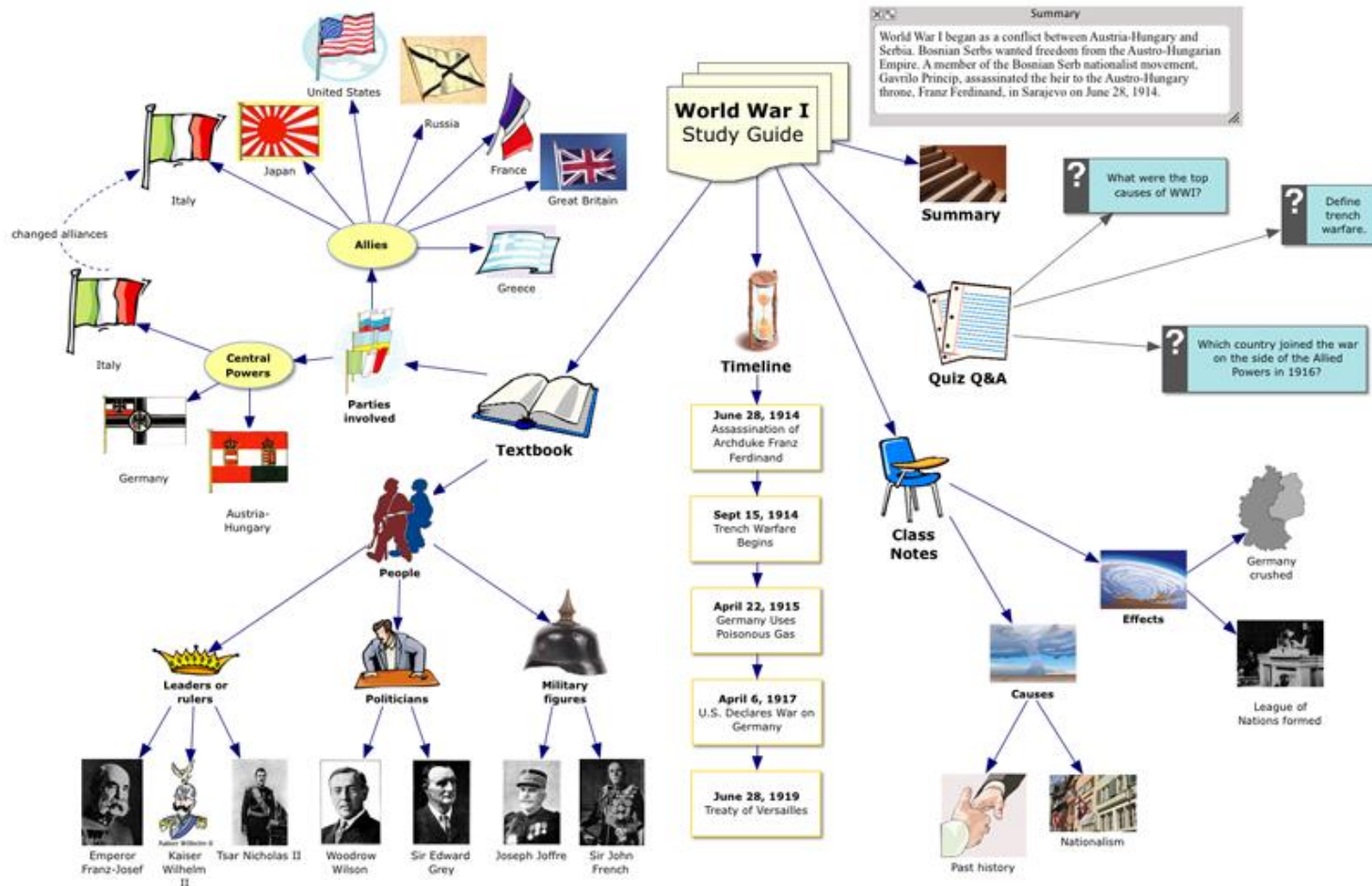


Graphic organisers

- A visual display that represents the relationship between facts and concepts
- Mind maps, flow diagrams, spider diagrams, Venn diagrams



Graphic organisers



Illusion of knowing

- Familiarity creates an illusion of knowing
- Rereading a text and highlighting key words feels productive **but does not strengthen retrieval**



What does the research say?

“Mastery requires both the possession of ready knowledge and the conceptual understanding of how to use it.”

Brown, Roediger and McDaniel in “Make it stick” (2014)